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NRIS 76

STATE DOCUMENTS

OCT 23 1974

ADDENDUM TO
DRAFT ENVIRONMENTAL IMPACT STATEMENT

AS
FINAL ENVIRONMENTAL IMPACT STATEMENT
ON
COLSTRIP-BROADVIEW 230 KV TRANSMISSION LINE

ENERGY PLANNING DIVISION
MONTANA DEPARTMENT OF NATURAL RESOURCES
AND CONSERVATION

OCTOBER 1974

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INTRODUCTION

The Department of Natural Resources and Conservation's (Department) Draft Environmental Impact Statement (EIS) regarding the application for the Colstrip-Broadview 230 KV double circuit transmission line was released for public review and comment on July 12, 1974. This draft statement contained an inventory of the existing natural and cultural environment of the Colstrip-Broadview area, a description of the proposed facility, and an assessment of the probable impacts of the proposed facility upon the environment. The applicants' preferred route, several alternatives (of the applicants), and a preliminary Department route were studied. Subsequent public opinion and comment upon this draft EIS was one of the important inputs in determining the final recommendation and route presented here.

Public Comment

The Department was made aware of public opinion concerning this draft EIS through a series of public hearings held in towns which would be affected by the proposed facility, and through written comments sent to the Department by the public.

The first set of meetings took place immediately after publication of the draft EIS. These meetings, held on July 15, 16 and 17 in Broadview, Custer and Hardin, respectively, were designed to inform interested persons on the contents of the draft EIS.

The second set of meetings was scheduled near the end of the 45-day public comment period. These meetings, held on August 19, 20, 21 and 22 in Broadview, Custer, Hardin and Billings, respectively, were designed to solicit public comment on the draft EIS and the corridor alternatives.

A total of 316 persons participated in the seven meetings. Since the release of the draft EIS, 25 letters from the public containing more than 100 signatures were received by the Department.

The major concern revealed through these public meetings and letters can be categorized into two groups, those who feel that the decision on this application should be delayed until a decision has been made regarding the application of Colstrip Units 3 and 4, and those who express disfavor with routes F & B passing by the east side of Billings.

Reasons expressed by the public requesting a delayed decision can be stated as follows:

The proposed double circuit 230 KV line would be converted to a 500 KV line later if Colstrip Units 3 and 4 are approved. The general feeling is that the approval of the proposed 230 KV lines will have the effect of a partial commitment to approve Colstrip Units 3 and 4 (although the Department clearly stated during the meetings that this would never be the case). Also, the proposed 230 KV lines are so intimately tied with the proposed Units 3 and 4 project, that a future decision on Units 3 and 4 will affect the design character and construction methods of the proposed 230 KV lines (although the applicants stated that whether Colstrip Units 3 and 4 are approved or not, the proposed 230 KV lines would use similar steel towers and construction methods). It was pointed out by many members of the public that if Units 3 and 4 are denied, the "unnecessary" but more expensive[1] steel towers would eventually be reflected in the applicants' rate structure. Also, many landowners asked for more information regarding the effect of 500 KV lines.

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[1] The cost difference between two wooden pole lines and a steel tower line for a distance of 110 miles is about eleven million dollars. This is based on an average $40,000 per mile for wooden poles and an average $180,000 per mile for steel towers with mixed self-support towers and guyed-wire towers.

Reasons for disfavor at routing the lines close to the Billings area are as follows:

Area residents felt that a route passing north and east of Billings, an area with comparatively substantial residential property at present and with anticipated residential growth, would effect more people, including potential subdividers. Concern was also expressed about the impact on property values.

Based on the two groups of public opinion described above and the study conducted by the Department, the following discussion is divided into two sections: Section One, Applicants' Request for Waiver and Section Two, Route Selection.

SECTION ONE. APPLICANTS' REQUEST FOR WAIVER

I Historic Background of Applications for Waiver

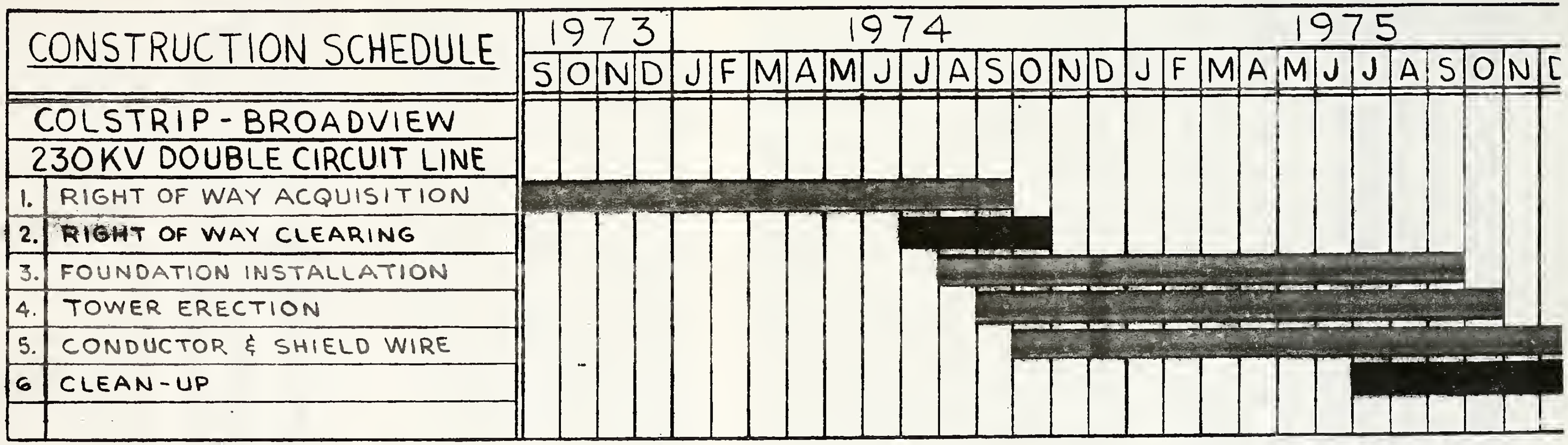
After filing an application with the Department, the applicants requested an expedited time schedule on the Colstrip to Broadview 230 KV transmission line project by applying for a waiver of the time limit of Section 70-806 of the Utility Siting Act (requiring that application for certification of the construction of the proposed utility facility must be filed at least two years prior to the anticipated date of commencement of construction), and for waiver of Sections 70-807 through 70-811 of the Act (requiring a complete report by the Department to the Board, a subsequent Board hearing, and formal findings by the Board). According to the Utility Siting Act, "a clear and convincing showing that an immediate need for a facility exists" and "good cause", respectively, must be given to support such requests. Therefore, on April 17, 1974, Montana Power Company (MPC) submitted a letter setting forth the basis for the requests. Portions of the letter are as follows:

> "The double circuit 230 kV line is necessary to transmit power generated by Colstrip Units No. 1 and No. 2 from Colstrip to Broadview, where at Broadview the power can be transmitted into The Montana Power Company system, which needs the power from Units No. 1 and No. 2. The power will be transmitted into The Montana Power Company system at Broadview primarily by connecting to the Billings-Great Falls 230 kV, the construction of which should be completed by December 1, 1974, and must be completed at the latest by July 1, 1975."
>
> "Our present schedule (Figure 1) is to start construction by July 1, 1974, with completion no later than December 31, 1975. It would only be possible to compress this eighteen-month construction period to fifteen months, if all the following conditions prevailed:
>
> 1. Right of way acquisition problems in the period after receipt of a State certificate do not significantly interfere with construction.

FIGURE 1

Construction Schedule

SCHEDULE TAKEN FROM
CHAS. T. MAIN DWG. 503-24-0



AWARD OF STEEL TOWER MATERIAL CONTRACT DEC. 6, 1973
AWARD OF ALUMINUM CABLE CONTRACT FEB. 22, 1974

CONSTRUCTION CONTRACT:
- BIDS ISSUED APR. 15, 1974
- AWARD OF CONTRACT MAY 15, 1974
- CONTRACTOR MOBILIZATION MAY 15 - JUNE 30, 1974
- START CONSTRUCTION JULY 1, 1974
- CONSTRUCTION COMPLETION DEC. 31, 1975

G.C. STEARS MARCH 29, 1974

2. There is an adequate supply of skilled workmen available to increase the peak complement from 100 to 140.

3. The weather is moderate during the Winter of 1974-75 and the amount of precipitation is not significantly above normal during the other months of the construction period.

4. Necessary materials can be purchased and delivered on schedule.

5. No other unforeseen problems arise."

"Based on right of way acquisition progress to date and past experience, it is unreasonable to assume that right of way acquisition progress subsequent to receipt of a certificate will permit completion of construction in less than eighteen months after receipt of same. The representative of the International Brotherhood of Electrical Workers believes that the construction contractor will do well to hire enough workmen to complete the line in eighteen months. Experience has shown that it is unwise to depend upon favorable weather conditions in a given year to expedite construction of a transmission line. For the above reasons, we believe the attached construction schedule represents the shortest period within which this line can be constructed. Therefore, it is imperative that the applicant receives a certificate for the Colstrip-Broadview 230 kV double circuit line prior to July 1, 1974."

"The existing Colstrip-Billings 230 kV line has the capacity to transmit the power generated by Unit No. 1. However, depending on this one existing 93-mile transmission line from Colstrip-Billings to transmit the 350 MWs of Unit No. 1 is unacceptable from a reliability standpoint. We have experienced outages on our 230 kV lines of durations of more than two days. Such an outage on the Colstrip-Billings 230 kV line would result in a major brownout in Montana because there is no other line to transmit the 350 MWs from Colstrip. The consequential harmful effects, inconveniences and damages from risking such unacceptable reliability, especially throughout the winter, could be astronomical."

"With Units No. 1 and No. 2 operating, two 230 kV circuits are required for transmission capacity and a third circuit for reliable transmission of the power generated by these two units to the Billings area. This will be accomplished with the existing Colstrip-Billings 230 kV line and by constructing the Colstrip-Broadview 230 kV double circuit line."

> "In view of the fact that we think Colstrip Units No. 3 and No. 4 are required in the future and Units No 3 and No. 4 may be approved by the Board of Natural Resources and Conservation, it seems prudent planning to construct a 230 kV double circuit line which could be converted to 500 kV rather than to construct two separate 230 kV lines which could soon become unnecessary if the two 500 kVs are constructed. Construction of two 230 kV lines would be an unwise use of capital and natural resources. It is submitted that the environmental impact of two 230 kV lines would be greater than one 230 double circuit line. Furthermore, if the two 500 kV lines are built, the cumulative environmental impact would be much greater if two separate 230 kV lines are constructed now rather than the one 230 kV double circuit line."

> "For reasons including those stated in the previous paragraphs, Hot Springs is the logical western termination for the 500 kV lines for Colstrip Units No. 3 and No. 4. Environmental and engineering factors dictated that all alternate routes considered by the applicant and their consultants for the Colstrip-Hot Springs 500 kV lines be located north of Billings in the general area of Broadview. Consequently, approval of the Colstrip-Broadview route will not eliminate any of these alternate routes west of Broadview from further consideration. It is submitted that the proposed location of the double circuit line from Colstrip to Broadview is the best location for the double circuit 230 kV line considering just the double circuit line itself regardless of the decision on the proposed two 500 kV lines."

> "In summary, unless a certificate for the Colstrip-Broadview 230 kV double circuit line is issued on or before June 30, 1974, and unless the Billings-Great Falls 230 kV line is completed before July 1, 1975, there will not be an adequate transmission system to transmit the power from Colstrip Unit No. 1 and No. 2 and meet the needs of The Montana Power Company system."

After reviewing the above material, the Department requested that the applicants submit a critical path diagram in order to explain the construction schedule in detail. Montana Power Company submitted this material on May 14, 1974 (see Appendix I). In order to analyze the need of this 230 KV line, especially the timing of the need, it has been necessary to examine the existing and future electric load of the entire MPC system. Montana Power Company has submitted explanatory materials (see Appendix II) which aid in this examination. At a later date some questions arose regarding load growth, construction contractors and the Westinghouse study on the construction time schedule.[2] These questions were answered by MPC on September 9, 1974 (see Appendix III). Historic data of July peak load, annual peak load and annual sales to ultimate customers of the MPC system are given in Table 1 and diagramed in Figure 2. Existing generating capacity of MPC is shown in Table 2.

On September 20, 1974, the applicants filed a petition in support of its request to waive the time requirement for the project provided in the Utility Siting Act (see Appendix IV for the content of this petition).

II Conclusions

Three transmission lines exist between Colstrip and the Billings area: a 69 KV line, a 69/100 KV line and a 230 KV line. Based on 100 miles distance, the transmitting capacity of these three lines is as follows:

69 KV -------- 23 MW
69/100 KV -------- 36 MW
230 KV -------- 325 MW - 400 MW

The total transmission capacity of the three lines is 384 MW to 459 MW. When generating Unit 2 comes on line on July 1, 1976, the total generating capacity of the Colstrip plant will be 660 MW assuming 40 MW will be consumed locally to supply the needs of the Colstrip community and its vicinity as well as mining usage. Therefore, a sum of 620 MW will need to be transmitted out. It is obvious that the existing capacity cannot meet the transmission requirement. As a result a second 230 KV line is required.

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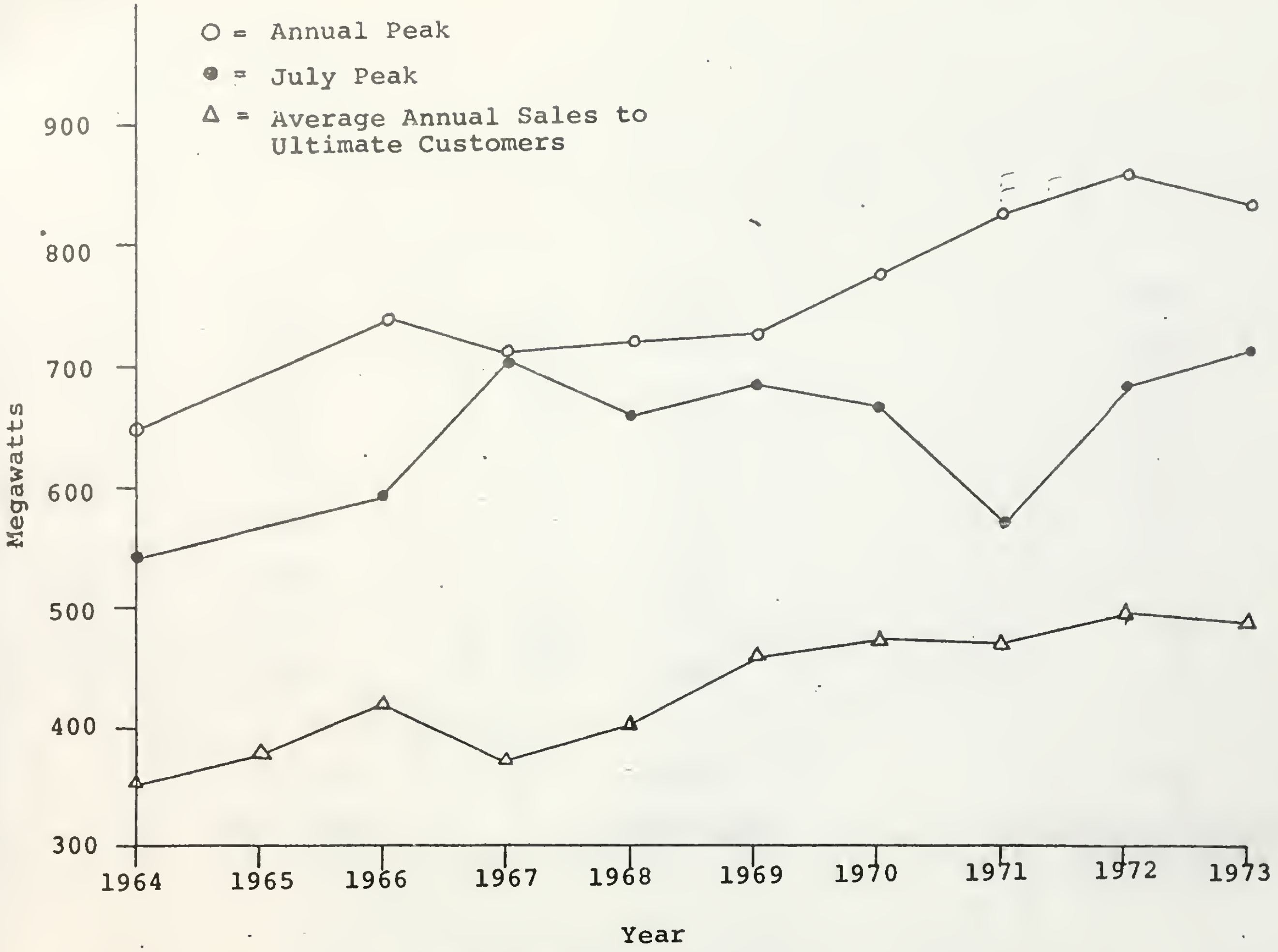
[2] "A labor force of approximately 300 men is required to construct 110 miles of single transmission line in 6 months" (Westinghouse Report, Section 3.7.1.1., p. 87).

TABLE 1

MONTANA POWER COMPANY JULY PEAK, ANNUAL PEAK, AND AVERAGE ANNUAL SALES TO ULTIMATE CUSTOMERS

YEAR	JULY PEAK	ANNUAL PEAK	AVERAGE ANNUAL SALES TO ULTIMATE CUSTOMERS
1964	544 mw	649	352
1965			379
1966	597	736	416
1967	703	711	372
1968	653	712	400
1969	686	719	455
1970	661	773	470
1971	567	817	469
1972	680	852	493
1973	707	830	485



Montana Power Company Annual Peak, July Peak, and Average Annual Sales to Ultimate Consumers

FIGURE 2

TABLE 2

MONTANA POWER COMPANY GENERATING PLANTS

PLANT (NAME)	KIND OF PLANT STEAM, HYDRO OR INT. COMB.	CAPACITY KW. (NAME PLATE)	CAPABILITY KW.*
Black Eagle	Hydro	16,800	18,000
Cochrane	"	48,000	50,000
Flint Creek	"	1,100	1,100
Hauser Lake	"	17,000	16,500
Holter	"	38,400	49,000
Kerr	"	168,000	180,000
Madison	"	9,000	8,500
Milltown	"	3,040	3,400
Morony	"	45,000	47,000
Mystic Lake	"	10,000	11,500
Rainbow	"	35,600	35,000
Ryan	"	48,000	60,000
Thompson Falls	"	30,000	40,000
Frank Bird	Steam	66,000	66,000
J. E. Corette	"	172,800	180,000
Lake Diesel, Yellowstone Nat'l Park	Internal Comb.	2,750	2,750
TOTAL	Hydro	469,940	520,000
	Steam	238,800	246,000
	Internal Comb.	2,750	2,750
TOTAL ALL PLANTS	-	711,490	768,750

*That load which can be safely carried for a period of 1 hour without exceeding any of the physical limitations of the equipment such as operating temperature or voltage maintenance.

SOURCE: Annual Report of Montana Power Company to the Montana Department of Public Service Regulation.

As described above, the need of a new 230 KV line by July 1, 1976 is established. However, a further examination of need for this new 230 KV line prior to July 1, 1976 is in order. Between July 1, 1975 and July 1, 1976, the maximum generating capacity of the Colstrip plant is 330 MW. If 40 MW are deducted for local use, the maximum amount that can be transmitted out is 290 MW. However, a new coal fired power plant very seldom has a 100% load factor when it first comes on-line. It is reasonable to assume an average of 60% load factor during the first operational year. In case of an accident occurring on the existing 230 KV line, 59 MW can still theoretically be transmitted out by the existing 69 KV and 69/100 KV lines. As quoted by MPC officials, due to the limitation of 2 auto-transformers in Billings, only 18 MW, rather than 59 MW, can be transmitted out. The effect of a power shortage due to line failure will be discussed further.

Transmission line outages are unexpected accidents that can be triggered by lightning, storms, trees falling on the line, contamination, terminal equipment failure, accidental tripping, foreign system trouble, supervisory mistakes in operation, etc. Although the utilities try to build in as much reliability as possible, a risk always exists. It is impossible to build in 100% reliability. For example, an inherent unreliability exists in the situation of Colstrip Units 1 & 2, and a double circuit 230 KV line built on single towers. Since two 230 KV lines will be placed on one tower, two lines will both be out of service if the tower falls. Then at least one power plant unit would have to shut down. Table 3 is created to juxtapose the above described example with Unit 1 and the existing lines.

TABLE 3

	On-line unit(s)	Transmission Line Capacity	Case of Line Outage	Reliability Rating
Case one	Unit 1 only	1 - 230 KV 1 - 69/100 KV 1 - 69 KV	1 - 230 KV out	either Unit 1 has to shut down or reduce load factor — unreliable
Case two	Units 1 & 2	1 - 230 KV 1 - 69/100 KV 1 - 69 KV 2 - 230 KV (on single tower)	2 - 230 KV (on single tower) out	either one Unit has to shut down or reduce load factor — unreliable

This juxtaposition points out that the reliability issue cannot justify a time waiver request since the applicants intentionally designed a system (described above as case two) which has inherent unreliability. If case two's reliability rating is acceptable by the applicants' standards, then case one's reliability rating should also be acceptable.

Also, a transmission line outage is an unexpected event of very short duration (from a fragment of a second to several days). With proper contingency planning to protect the system and customers, the need of a 230 KV line prior to July 1, 1976 cannot be justified when weighed against other factors which will be stated later. When the applicants' electric load forecast is compared with the availability of electricity, it appears that with the forced outage reserve available and proper maintenance scheduling, the applicants' electricity resources are sufficient to meet the load forecast without Unit 1's electricity.

As described in the applicants' report, six months are required for construction of the proposed 230 KV lines. With the corridor recommended in Section Two, the time required for right-of-way acquisition is minimized. Therefore, a maximum period of 15 months should be sufficient for construction. Based on the above information and analysis, the Department believes that good cause and immediate need cannot be shown to justify approval of the waiver request. Accordingly, the Department recommends that the requests for waiver be denied.

SECTION TWO

I Introduction

If the Board of Natural Resources and Conservation adopts the Department's recommendation not to grant the waiver of time requirement of section 6 and of the provisions of sections 7 through 11 of the Montana Utility Siting Act, it then has the duty upon the filing of the Department's report to conduct a hearing on the application. However, if the Board grants the waiver of time requirements, the Department would still be required by law to file this report, and the Board must hold a hearing pursuant to the requirements of the law. As a final alternative the Board could grant all of the waiver requests in which case no hearing would be required; nevertheless, the Department is submitting this report and recommendation to the Board in order to aid the Board in making an informed decision on the granting of the certificate.

II Recommendation

The Department recommends that a Certificate of Environmental Compatibility and Public Need be granted approving the corridor hereinafter described. However, the certificate should contain the condition that the applicants may not erect the transmission towers to be used for the proposed facility until the Board has determined the need for the type of towers to be employed, the need to be determined after the Board has rendered a decision on the application for certification for the proposed Colstrip Units 3 and 4 and associated facilities.

The Department's recommendation is made in consideration of allowing the applicants to acquire rights-of-way for a double circuit 230 KV transmission line within the corridor described as follows.

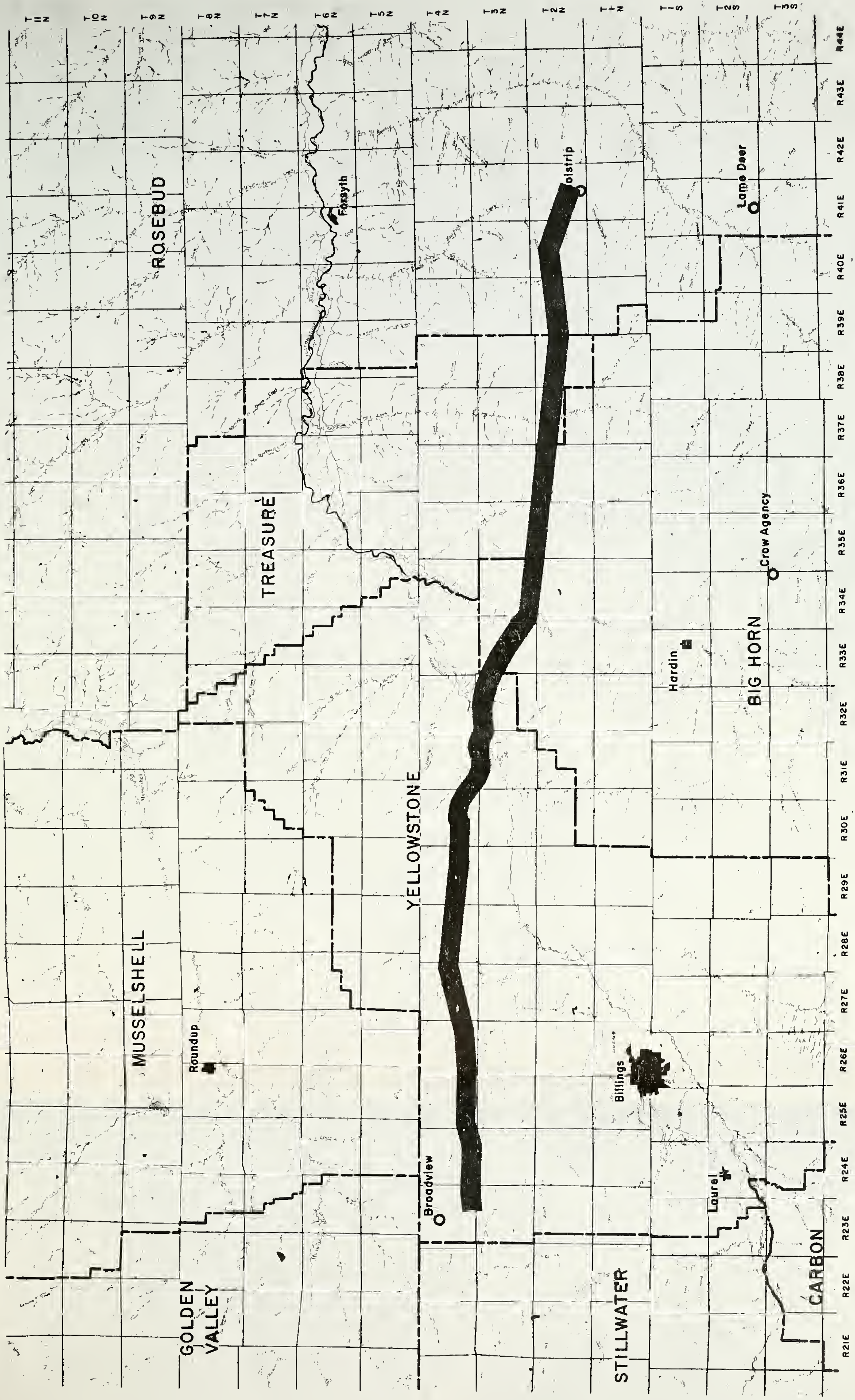
III Corridor Selection

From Colstrip west the recommended corridor spans several major drainages, including Sarpy and Tullock Creeks and then on to the Bighorn River in the same route as was recommended as Corridor F in the draft environmental impact statement. After crossing the Bighorn River the recommended corridor swings northwest approximately four miles to intersect with the applicants' preferred route, (Corridor A). After this intersection the corridor crosses the Yellowstone River slightly downstream from the applicants' preferred crossing. Immediately thereafter the Department's recommended corridor joins the applicants' preferred route for the remaining distance to the destination point south of Broadview. The recommended corridor is shown on the surface water base map.

Reasons For Recommended Corridor

Colstrip Unit #2 is scheduled to go on-line by July 1, 1976. The Colstrip to Broadview 230 KV line is necessary for the transmission of electricity from this unit. After analysis of the applicants' construction schedule, load forecast and other supportive data, the Department has concluded that the recommended route is the most desirable route in terms of overall environmental and social impacts.

The original Department recommendation (Corridor F) was routed near the northeast corner of Billings, and a significant amount of public opposition to a transmission corridor that close to Billings was encountered during the draft EIS review period. The corridor now recommended by the Department will avoid this population and land use conflicts associated with urbanized areas.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R39E
R40E
R41E
R42E
R43E
R44E
ROSEBUD
TREASURE
YELLOWSTONE
MUSSELSHELL
GOLDEN VALLEY
STILLWATER
CARBON
BIG HORN
Forsyth
Colstrip
Lame Deer
Crow Agency
Hardin
Billings
Laurel
Broadview
Roundup

The Yellowstone River corridor crossing in this recommendation is more narrow than the applicants' preferred crossing. Interviews with the affected landowners have revealed that this crossing would be more in accord with their wishes.

There are several disadvantages of the Department's recommended corridor that are acknowledged. The western segment of the corridor from the Yellowstone River to Broadview crosses large blocks of continuous cropland whereas the southern route (Corridor F) near Billings contains smaller areas of farmland. For this reason, direct interference with agricultural use could be more easily avoided in Corridor F by the careful placement of towers. Another disadvantage is that the Department's recommended corridor will make less use of existing corridors and developed areas. The Department's recommended corridor relects our efforts to select a route with the least overall social impacts - which is largely indicated by expressed public opinion.

There is an important issue as to whether the selection of a Colstrip to Broadview corridor at this time will compromise our flexibility to determine later on an optimum route from Colstrip to Hot Springs if the proposed Colstrip 3 and 4 project is approved by the Board of Natural Resources and Conservation. If the twin 500 KV lines are built, and if the Colstrip to Broadview route is chosen as part of the corridor to Hot Springs, there would still be ample flexibility to choose from a wide range of possible corridors within the north-south extension of the Colstrip to Hot Springs transmission line study area.

In view of the tradeoffs recognized and for the reasons indicated the Department recommends approval of the Colstrip to Broadview 230 KV transmission line corridor as described above.

This recommendation is for a two-mile wide corridor only. The applicants shall submit a preferred center line within the recommended two-mile wide corridor for the Department's further approval prior to beginning construction. The selection of a center line within the corridor shall follow as much as possible property boundary lines and existing fence lines and also shall accommodate as much as possible the landowners' preferences.

The applicants shall also submit new access road locations and methods of construction to the Department for further approval as soon as these become available prior to beginning construction.

The type of structure used for these proposed 230 KV lines will be recommended at a later date due to the uncertainty of approving Colstrip Units 3 and 4 at this time. Since a steel tower line would cost eleven million dollars more than wooden pole lines even if Colstrip Units 3 and 4 are denied, this eleven million dollars extra investment would still eventually be paid by consumers through a higher rate. It is in the best interest of Montanans as well as the utility companies for the Board to determine the tower structure type at a later date when a determination on Colstrip Units 3 and 4 has been made and the impacts of the total proposal are clearly revealed.

APPENDIX I

THE MONTANA POWER COMPANY
GENERAL OFFICES: 40 EAST BROADWAY, BUTTE, MONTANA 59701 · TELEPHONE 406/723-5421
SERVING YOU IS OUR BUSINESS

May 14, 1974

Mr. Albert C. Tsao
Administrator
Energy Planning Division
Montana Department of Natural
  Resources & Conservation
32 South Ewing
Helena, Montana 59601

Dear Mr. Tsao:

A critical path schedule has been developed for the construction of the Colstrip-Broadview 230 kV double circuit transmission line. Obtaining a state certificate, acquiring right of way, material deliveries and construction activities are included in this critical path analysis. A diagram of the critical path schedule for this line is enclosed. (MPCo. Dwg. 1635-C)

The diagram shows that receipt of a state certificate by July 1, 1974 will result in completion of the line by February 20, 1976. Note that the receipt of a state certificate and the subsequent acquisition of right of way are in the critical path. The working days required are based on our legal departments' latest and best estimate of time to acquire right of way, latest information on material deliveries, and time required to construct the line as estimated by C. T. Main and reviewed by The Montana Power Company.

The Montana Power Company submits that issuance of a state certificate should not be delayed beyond July 1, 1974, because delay for any period of time can be expected to extend the completion by a similar amount of time. The certificate should be issued by July 1, 1974, because:

1. We must authorize tower steel fabrication by then at a commitment of $1,800,000 in order to be able to complete the line on the present schedule.

2. One 230 kV line should not be relied on for transmitting Colstrip Unit #1 power to the Billings area for any longer than absolutely necessary. If power could be purchased to replace Colstrip #1 power during an outage of the existing Colstrip-Billings 230 kV line, it is estimated that it would cost an increment of $57,024/day. This is based on 330,000 KW at 80% capacity at 9 mills/KWH. If replacement power were unavailable at the time of such a line outage, service to customers would have to be curtailed.

3. Each month the power from Colstrip Unit #1 must be transmitted over only the existing 230 kV line as a result of the Colstrip-Broadview 230 kV double circuit line not being constructed, the incremental transmission losses due to higher line loadings amounts to 10,000 KW or $37,500 per month.

4. If a change in location for a substantial or critical section of the line is recommended by the state, additional time would be required to survey, design, purchase material, and acquire right of way for the new location. The critical path schedule does not allow time for this activity.

5. Receipt of a state certificate on the requested date will permit construction during the late summer and fall of 1974. This will allow the line to be completed at the earliest possible date even though construction activities are limited by adverse weather during either winter of 1974-75 or 1975-76. A delay in receipt of a certificate will make it necessary to conduct construction activities related to tower assembly and erection during both these winters. If either winter was severe, the completion of the line would be delayed as a result of not receiving the state certificate by July 1, 1974.

6. A combination of delay in obtaining the state certificate and unforeseen circumstances subsequently could extend the completion of this line beyond May 1, 1976, when Colstrip Unit #2 is scheduled to begin operation. In that event, Colstrip Unit #2 would not be able to operate because the Colstrip-Broadview 230 kV double circuit line had not been completed.

There is another important concern in addition to those mentioned above. Should the state deny a certificate for the subject line today, it would be impossible to provide reliable transmission for the power from Colstrip Unit #1 or transmission capacity for the power from Colstrip Unit #2 by an alternate means in the time available. To illustrate this we have prepared a critical path schedule for the construction of two 230 kV wood-pole lines. It was assumed that these would be built on substantially the same right of way as the proposed double circuit tower line. If such an alternative was recommended by the state on July 1, 1974, the two wood-pole transmission lines could not be completed before August 15, 1976. This completion date is unacceptable for providing transmission capacity for power from Colstrip Units #1 & #2 for reasons stated previously. A diagram of the critical path for the construction of the two wood-pole lines is enclosed. (MPCo. Dwg. 1634-C)

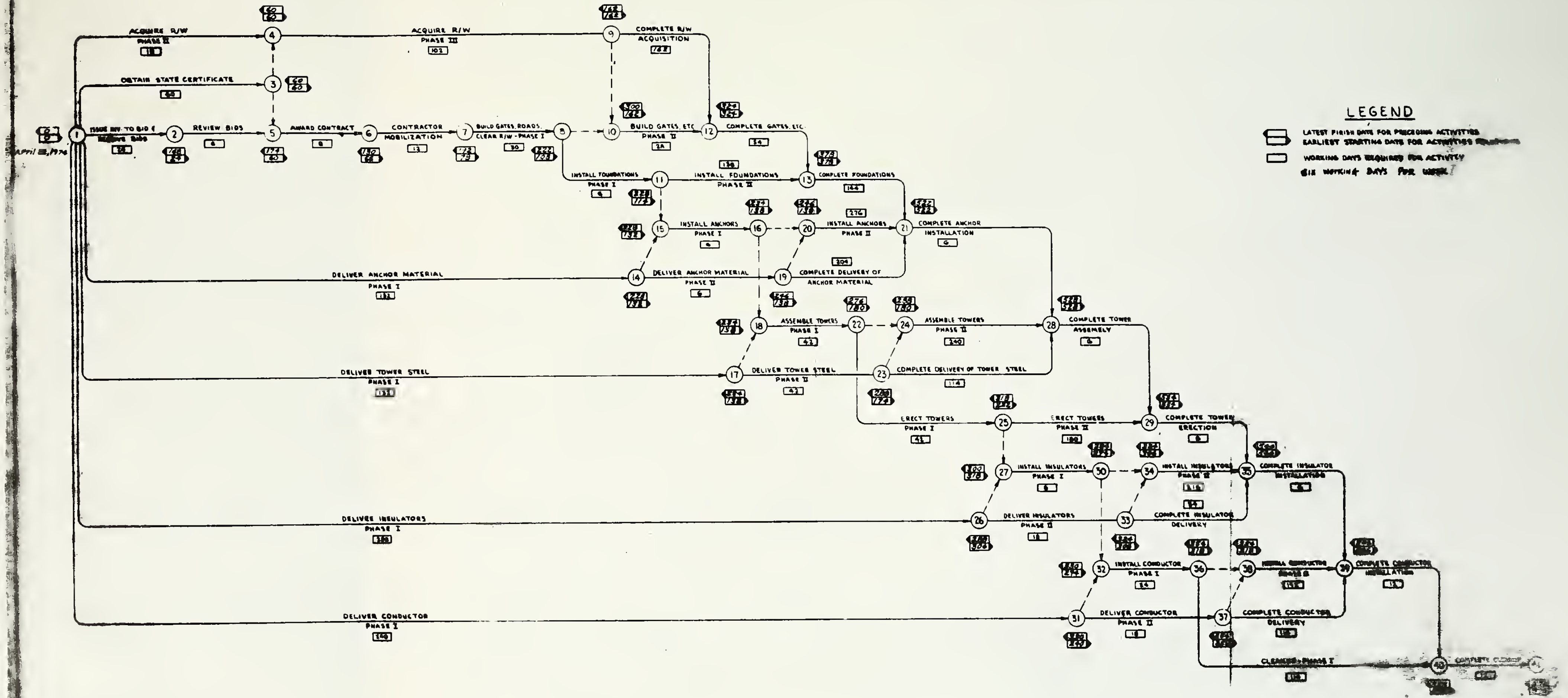
The Montana Power Company believes that sufficient information has now been submitted to justify the need to receive a state certificate on the Colstrip-Broadview 230 kV double circuit line by July 1, 1974.

Sincerely,

John T. Evans.

John T. Evans
Asst. Chief Engineer and
Manager of Engineering

DEO/mir
Encl.


LEGEND
LATEST FINISH DATE FOR PRECEDING ACTIVITIES
EARLIEST STARTING DATE FOR ACTIVITIES FOLLOWING
WORKING DAYS REQUIRED FOR ACTIVITY
SIX WORKING DAYS PER WEEK
APRIL 1974
ISSUE INV. TO BID & RECEIVE BIDS
ACQUIRE R/W PHASE II
OBTAIN STATE CERTIFICATE
REVIEW BIDS
6
AWARD CONTRACT
CONTRACTOR MOBILIZATION
13
BUILD GATES, ROADS, CLEAR R/W - PHASE I
30
ACQUIRE R/W PHASE III
102
COMPLETE R/W ACQUISITION
BUILD GATES, ETC PHASE II
COMPLETE GATES, ETC.
54
INSTALL FOUNDATIONS PHASE I
6
INSTALL FOUNDATIONS PHASE II
138
COMPLETE FOUNDATIONS
144
INSTALL ANCHORS PHASE I
6
INSTALL ANCHORS PHASE II
276
COMPLETE ANCHOR INSTALLATION
6
DELIVER ANCHOR MATERIAL PHASE I
DELIVER ANCHOR MATERIAL PHASE II
6
COMPLETE DELIVERY OF ANCHOR MATERIAL
204
ASSEMBLE TOWERS PHASE I
42
ASSEMBLE TOWERS PHASE II
240
COMPLETE TOWER ASSEMBLY
6
DELIVER TOWER STEEL PHASE I
DELIVER TOWER STEEL PHASE II
42
COMPLETE DELIVERY OF TOWER STEEL
114
ERECT TOWERS PHASE I
ERECT TOWERS PHASE II
180
COMPLETE TOWER ERECTION
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INSTALL INSULATORS PHASE I
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INSTALL INSULATORS PHASE II
DELIVER INSULATORS PHASE I
DELIVER INSULATORS PHASE II
COMPLETE INSULATOR DELIVERY
COMPLETE INSULATOR INSTALLATION
INSTALL CONDUCTOR PHASE I
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INSTALL CONDUCTOR PHASE II
COMPLETE CONDUCTOR INSTALLATION
DELIVER CONDUCTOR PHASE I
DELIVER CONDUCTOR PHASE II
COMPLETE CONDUCTOR DELIVERY
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CRITICAL PATH DIAGRAM
CONSTRUCTION OF COLSTRIP
230 KV DOUBLE CIRCUIT LINE

THE MONTANA POWER
BUTTE, MONTANA

DRAWN G.C. STEARS
CHECKED O.P. RICE

APPENDIX II

THE MONTANA POWER COMPANY

This summary lists the assumptions used in the attached load - resource tables which set forth the effect of not having a Colstrip-Broadview double circuit 230 kV transmission line available.

Assumptions

1. Firm peak and energy loads are based on the 2/1/74 long range forecast, but are adjusted for changes in the industrial block loads which have occurred since our previous reports to the DNR. The net load change is only a few megawatts downward in the two years considered. It is assumed that critical water exists for hydro energy generation.

2. The firm peak and energy resources include the latest existing contracts and also those contracts that are in the near final negotiating process.

3. Forced Outage Reserves

   The capacity forced outage reserves are estimates based on calculations made under our recently signed Inter-Company Pool Agreement. The reserves under ICP actually calculated for Montana Power in the year 1974-75 amounted to approximately 19% of the firm resource capacity for which we are responsible. In this tabulation for 1975-76, and 1976-77, we assume conservatively that with the new thermal generation in the ICP area the same percent of reserve approximately will continue. We used 20% of the capacity for which we must carry reserves.

   Energy reserve is calculated at 5% of the thermal generation.

4. Peak and energy lost during maintenance of generating units has been removed from the resource figures on the basis of our best tentative maintenance schedule.

5. It is assumed that new thermal generating units coming on line are capable of average production of 50% of rating for three months. This allows for a period of maturation.

6. Interruptible loads are assumed to be carried by reserves.

WHB/by/2/4

SHEET 2 of 7

THE MONTANA POWER COMPANY
SURPLUS (DEFICIENCY) WITHOUT 230 KV DOUBLE CIRCUIT LINE

PEAK SUMMARY (MW)

8/26/74

		JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
1975-76 (COLSTRIP NO. 1 OPERATIONAL)	TOTAL ESTIMATED LOAD	862	842	797	858	931	1023	1023	948	926	864	864	885
	TOTAL NET RESOURCES	1020	1191	1230	1119	1161	1253	1253	1178	1156	1110	1134	1124
	SURP (DEF) W/ EXISTING 230 KV SINGLE CIRCUIT LINE OPERATING	(39)	135	180	4	31	43	32	26	23	(7)	(97)	(113)
	SURP (DEF) W/ EXISTING 230 KV SINGLE CIRCUIT LINE UNAVAILABLE	(204)	(30)	15	(161)	(134)	(122)	(133)	(139)	(142)	(172)	(262)	(113)
1976-77 (OLSTRIP NO. 1 & 2 OPERATIONAL)	TOTAL ESTIMATED LOAD	912	891	839	894	970	1070	1070	992	969	903	903	926
	TOTAL NET RESOURCES	960	1061	1123	1122	1119	1156	1156	1112	1113	1113	1032	1022
	SURP (DEF) W/ EXISTING 230 KV SINGLE CIRCUIT LINE OPERATING	(172)	(77)	(12)	(2)	(94)	(134)	(142)	(114)	(268)	(92)	(94)	(124)
	SURP (DEF) W/ EXISTING 230 KV SINGLE CIRCUIT LINE UNAVAILABLE	(337)	(242)	(177)	(167)	(259)	(299)	(307)	(279)	(433)	(257)	(259)	(289)

NOTE: SURP (DEF) IS OVER TOTAL LOAD, RESERVES, AND MAINTENANCE

THE MONTANA POWER COMPANY
SURPLUS (DEFICIENCY) WITHOUT 230KV DOUBLE CIRCUIT LINE

ENERGY SUMMARY (MW)

8/26/7

		JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
1975-76 (COLSTRIP NO. 1 OPERATIONAL)	TOTAL ESTIMATED LOAD	677	673	656	676	710	769	785	744	733	706	694	709
	TOTAL NET RESOURCES	672	723	747	757	756	847	851	822	790	777	815	815
	SURP (DEF) W/ EXISTING 230 KV SINGLE CIRCUIT LINE OPERATING	(32)	25	64	60	24	57	43	50	30	44	(64)	(80)
	SURP (DEF) W/ EXISTING 230 KV SINGLE CIRCUIT LINE UNAVAILABLE	(115)	(58)	(19)	(105)	(141)	(108)	(121)	(115)	(135)	(121)	(147)	(80)
1976-77 (OLSTRIP NO. 1 & 2 OPERATIONAL)	TOTAL ESTIMATED LOAD	713	709	690	704	740	804	822	777	766	737	725	741
	TOTAL NET RESOURCES	634	685	702	704	696	757	771	807	860	777	785	780
	SURP (DEF) W/ EXISTING 230 KV SINGLE CIRCUIT LINE OPERATING	(100)	(50)	(37)	(29)	(70)	(68)	(73)	(55)	(267)	12	36	18
	SURP (DEF) W/ EXISTING 230 KV SINGLE CIRCUIT LINE UNAVAILABLE	(265)	(215)	(222)	(194)	(235)	(233)	(237)	(220)	(432)	(153)	(129)	(147)

NOTE: SURP (DEF) IS OVER TOTAL LOAD, RESERVES, AND MAINTENANCE WITH CRITICAL WATER CONDITIONS sheet 4 of

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8/26/74

THE MONTANA POWER COMPANY

PEAK SURPLUS OR (DEFICIENCY) WITH ONLY
COLSTRIP-BROADVIEW 230 KV #1:
A. OPERATING
B. NOT OPERATING

	1975 JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	1976 JUN	
FIRM PEAK LOAD (7/16/74 TAB)	868	848	803	854	927	1019	1019	944	922	860	860	881	
LESS ACM BLOCK LOADS (PRE 8/74)	-62	-62	-62	-62	-62	-62	-62	-62	-62	-62	-62	-62	
PLUS ACM BLOCK LOADS (POST 8/74)	56	56	56	66	66	66	66	66	66	66	66	66	
ADJUSTED FIRM PEAK LOAD	862	842	797	858	931	1023	1023	948	926	864	864	885	
FIRM PEAK RESOURCES (7/16/74 TAB)	1028	1115	1146	1035	1062	1122	1140	1080	1056	1026	1134	1124	
PLUS HANFORD EXTENSION		84	84	84	84	84	84	84	84	84			
HANFORD BUDGET CHANGE	-8	-8											
PROPOSED PUGET TRADE					15	47	29	14	16				
NET PEAK RESOURCES	1020	1191	1230	1119	1161	1253	1253	1178	1156	1110	1134	1124	
SURPLUS OVER FIRM LOAD	158	349	433	261	230	230	230	230	230	246	270	239	
LESS FORCED OUTAGE RESERVES ①	187	187	187	187	187	187	187	187	187	187	187	187	
SURPLUS OVER TOTAL LOAD & RESERVES	(29)	162	246	74	43	43	43	43	43	59	83	52	
LESS MAINTENANCE	10	27	66	70	12	0	11	17	20	66	180	165	A
SURPLUS OVER TOTAL LOAD, RESERVES AND MAINT. W/O 230 KV CONTINGENCY	(39)	135	180	4	31	43	32	26	23	(7)	(97)	(113)	

ASSUME THAT THE EXISTING 230 KV LINE FAILS, WHICH IMPLIES THAT COLSTRIP NO. 1 CAPACITY IS LOST (165 MW)

	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	
SURPLUS OVER TOTAL LOAD & RESERVES	(194)	(3)	81	(91)	(122)	(122)	(122)	(122)	(122)	(106)	(82)	(113)	
LESS MAINTENANCE	10	27	66	70	12	0	11	17	20	66	180	—	B.
SURPLUS OVER TOTAL LOAD, RESERVES AND MAINT W/ 230 KV CONTINGENCY	(204)	(30)	15	(161)	(134)	(122)	(133)	(139)	(142)	(172)	(262)	(113)	

① RESERVES ARE ESTIMATED AT 20% OF SYSTEM CAPABILITY (520 MW HYDRO + 415 STEAM). INTERRUPTIBLE INCLUDED IN RESERVES

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THE MONTANA POWER COMPANY

Peak Surplus or (Deficiency) with only
Colstrip - Broadview 230 K.V. #1 :
A. Operating
B Not Operating

	1976 JUL.	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	1977 JUN	
FIRM PEAK LOAD (7/16/74 TAB)	908	887	835	890	966	1066	1066	988	965	899	899	922	
LESS ACM BLOCK LOADS (PRE-8/74)	-62	-62	-62	-62	-62	-62	-62	-62	-62	-62	-62	-62	
PLUS ACM BLOCK LOADS (POST-8/74)	66	66	66	66	66	66	66	66	66	66	66	66	
ADJUSTED FIRM PEAK LOAD	912	891	839	894	970	1070	1070	992	969	903	903	926	
FIRM PEAK RESOURCES (7/16/74 TAB)	1125	1142	1204	1203	1200	1200	1199	1193	1194	1194	1197	1187	
PLUS HANFORD EXTENSION		84	84	84	84	84	84	84	84	84			
PROPOSED PUGET TRADE						37	38						
LESS A COLSTRIP UNIT	165	165	165	165	165	165	165	165	165	165	165	165	
NET PEAK RESOURCES	960	1061	1123	1122	1119	1156	1156	1112	1113	1113	1032	1022	
SURPLUS OVER FIRM LOAD	48	170	284	228	149	86	86	120	144	210	129	96	
LESS FORCED OUTAGE RESERVES ①	220	220	220	220	220	220	220	220	220	220	220	220	
SURPLUS OVER TOTAL LOAD & RESERVES	(172)	(50)	64	8	(71)	(134)	(134)	(100)	(76)	(10)	(91)	(124)	A.
LESS MAINTENANCE ②	0	27	76	10	23	0	8	14	192	82	3	—	
SURPLUS OVER TOTAL LOAD, RESERVES AND MAINT. w/o 230 KV. CONTINGENCY	(172)	(77)	(12)	(2)	(94)	(134)	(142)	(114)	(268)	(92)	(94)	(124)	

ASSUME THAT THE EXISTING 230 K.V. LINE FAILS, which IMPLIES THAT The REMAINING COLSTRIP UNITS' CAPACITY IS LOST (165 MW ADDITIONAL).

	JUL.	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	
SURPLUS OVER TOTAL LOAD & RESERVES	(337)	(215)	(101)	(157)	(236)	(299)	(299)	(265)	(241)	(175)	(256)	(289)	B.
LESS MAINTENANCE ②	0	27	76	10	23	0	8	14	192	82	3	—	
SURPLUS OVER TOTAL LOAD, RESERVES AND MAINT. w/ 230 K.V. CONTINGENCY	(337)	(242)	(177)	(167)	(259)	(299)	(307)	(279)	(433)	(257)	(259)	(289)	

① RESERVES ESTIMATED AT 20% of System Capability (520 Hydro + 580 steam) INTERRUPTIBLE included in Rese

② MAINTENANCE IS TRADED i.e. The one plant that is not on is used to cover maintenance.

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8/26/74

THE MONTANA POWER COMPANY

ENERGY SURPLUS OR ( )EFICIENCY) WITH ONLY
COLSTRIP - BROADVIEW 230 KV #1 EITHER:
A. OPERATING
B. NOT OPERATING

	1975 JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	1976 JUN	
FIRM ENERGY LOAD (7/16/74 TAB)	683	679	661	675	709	768	784	743	732	705	693	708	
LESS ACM BLOCK LOADS (PRE-8/74)	-56	-56	-56	-56	-56	-56	-56	-56	-56	-56	-56	-56	
PLUS ACM BLOCK LOADS (POST-8/74)	50	50	50	57	57	57	57	57	57	57	57	57	
ADJUSTED FIRM ENERGY LOAD	677	673	656	676	710	769	785	744	733	706	694	709	
FIRM ENERGY RESOURCES (7/16/74 TAB)	644	629	625	692	691	782	786	757	725	712	815	815	
PLUS HANFORD EXTENSION		65	65	65	65	65	65	65	65	65			
HANFORD BUDGET CHANGE	-8	-8											
PROPOSED PUGET TRADE	36	37	57										
NET ENERGY RESOURCES	672	723	747	757	756	847	851	822	790	777	815	815	
SURPLUS OVER FIRM LOAD W/CRIT. H_2O	(5)	50	91	81	46	78	66	78	57	71	121	106	
LESS ENERGY RESERVES (INT. INCL.)	21	21	21	21	21	21	21	21	21	21	21	21	
SURPLUS OVER TOTAL LOAD & RESERVES	(26)	29	70	60	25	57	45	57	36	50	100	85	A
LESS MAINTENANCE	6	4	6	0	1	0	2	7	6	6	164	165	
SURPLUS OVER TOTAL LOAD, RESERVES AND MAINT. W/O 230 KV CONTINGENCY	(32)	25	64	60	24	57	43	50	30	44	(64)	(80)	

ASSUME THAT THE EXISTING 230 KV LINE FAILS, WHICH IMPLIES THAT COLSTRIP NO. 1 GENERATION IS LOST

	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	
SURPLUS OVER TOTAL LOAD & RESERVES ①	(109)	(54)	(13)	(105)	(140)	(108)	(119)	(108)	(129)	(115)	(65)	(80)	B
LESS MAINTENANCE	6	4	6	0	1	0	2	7	6	6	82	—	
SURPLUS OVER TOTAL LOAD, RESERVES AND MAINT. W/ 230 KV CONTINGENCY	(115)	(58)	(19)	(105)	(141)	(108)	(121)	(115)	(135)	(121)	(147)	(80)	

① 5% ENERGY RESERVE IS ASSIGNED TO EACH THERMAL PLANT, THEREFORE 9 MW FOR COLSTRIP NO. 1 HAD ALREADY BEEN REMOVED.

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8/26/74

THE MONTANA POWER COMPANY

ENERGY SURPLUS OR (DEFICIENCY) WITH ONLY COLSTRIP-BROADVIEW 230 KV #) EITHER:
A. OPERATING
B. NOT OPERATING

	1976 JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	1977 JUN	
FIRM ENERGY LOAD (7/16/74 TAB)	712	708	689	703	739	803	821	776	765	736	724	740	
LESS ACM BLOCK LOADS (PRE-8/74)	-56	-56	-56	-56	-56	-56	-56	-56	-56	-56	-56	-56	
PLUS ACM BLOCK LOADS (POST-8/74)	57	57	57	57	57	57	57	57	57	57	57	57	
ADJUSTED FIRM ENERGY LOAD	713	709	690	704	740	804	822	777	766	737	725	741	
FIRM ENERGY RESOURCES (7/16/74 TAB)	699	650	720	852	866	917	921	907	960	877	950	945	
PLUS HANFORD EXTENSION		65	65	65	65	65	65	65	65	65			
PROPOSED PUGET TRADE	18	53		-48	-70	-60	-50						
LESS COLSTRIP UNIT (#2)	83	83	83	165	165	165	165	165	165	165	165	165	
NET ENERGY RESOURCES	634	685	702	704	696	757	771	807	860	777	785	780	
SURPLUS OVER FIRM LOAD W/CRIT. H2O	(79)	(24)	(12)	0	(44)	(47)	(51)	(30)	(94)	40	60	39	
LESS ENERGY RESERVES (INT. INCL.)	21	21	21	21	21	21	21	21	21	21	21	21	
SURPLUS OVER TOTAL LOAD & RESERVES	(100)	(45)	(33)	(21)	(65)	(68)	(72)	(51)	(115)	19	39	18	A.
LESS MAINTENANCE ①	0	5	4	8	5	0	1	4	152	7	3	—	
SURPLUS OVER TOTAL LOAD, RESERVES AND MAINT. W/O 230 KV CONTINGENCY	(100)	(50)	(37)	(29)	(70)	(68)	(73)	(55)	(267)	12	36	18	

ASSUME THAT THE EXISTING 230 K.V. LINE FAILS, WHICH IMPLIES THAT THE REMAINING COLSTRIP UNITS' (#1) GENERA IS LOST.

	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	
SURPLUS OVER TOTAL LOAD & RESERVES ②	(265)	(210)	(198)	(186)	(230)	(233)	(237)	(216)	(280)	(146)	(126)	(147)	B.
LESS MAINTENANCE	0	5	4	8	5	0	1	4	152	7	3	—	
SURPLUS OVER TOTAL LOAD, RESERVES AND MAINT. W/ 230 KV. CONTINGENCY	(265)	(215)	(222)	(194)	(235)	(233)	(237)	(220)	(432)	(153)	(129)	(147)	

① MAINTENANCE IS TRADED IE. THE PLANT NOT ON CAN BE USED TO COVER FIRST PLANTS' MAINTENANCE.

② LOSS OF UNIT LESS ITS ENERGY RESERVES.

EXHIBIT "B"

LIST OF MONTANA POWER CO. CONTRACTS

Sheet 1 of 3

Other Utility	Contract No. or Other Designation	Expiration Date	Firm Imports - Mw.			Firm Exports - Mw.			Remarks
			Peak	Energy	Time Period	Peak	Energy	Time Period	
Bonneville Power Adm. (BPA)	14-03-51702	8/87	50	40	Thru 1980	—	—	—	We have informal notice of probable withdrawal in about 1980.
" " " "	" " "	9/75	140	68.3	8/74-9/74	—	—	—	Available only in Aug. & Sept. — See Sec. 4 of contract
" " " "	" " "	"	140	68.3	8/75-9/75	—	—	—	
Washington Public Power Supply Syst. and BPA	14-03-35621	6/96	23	23	9/74-12/74	—	—	—	Exchange from BPA for 10% of Hanford Budget — based on BPA rates.
Ditto	& 14-03-39212	"	16.9	16.9	1/75-8/75	—	—	—	
"	Ditto	"	39.3	0	9/75-8/76	—	—	—	Ditto - See Sec. 11(b) of 14-03-39212
"	"	"	40.8	0	9/76-8/77	—	—	—	Ditto
"	"	"	41.5	0	9/77-8/78	—	—	—	"
"	"	"	42.0	0	9/78-8/79	—	—	—	"
"	"	"	42.7	0	9/79-6/80	—	—	—	"
"	14-03-39212	"	80	68	7/80-6/96	—	—	—	Fixed amounts per Sec. 5 of 14-03-39212
Bonneville Power Adm. (BPA) and WPPSS	14-03-33431	8/75	0	45.6	9/74-8/75	—	—	—	Shapeable monthly within certain limits. No guaranteed capacity.
Bonneville Power Adm. (BPA)	14-03-37051	10/77	84	65.7	4/75	—	—	—	Time period estimated.
Ditto	Ditto	"	84	69.8	8/75-4/76	—	—	—	Ditto
"	"	"	84	69.8	8/76-4/77	—	—	—	"
"	"	"	84	64.2	8/77-10/77	—	—	—	"
Bonneville Power Adm. (BPA)	Transfer Contracts	8/87	6	9	7/74-6/75	—	—	—	Compensation for wheeling to BPA Coop Loads. Amounts, dependent on size of loads, are estimated.
Ditto	14-03-53715,	"	6	10	7/75-6/76	—	—	—	
"	14-03-74724,	"	7	10	7/76-6/77	—	—	—	
"	14-03-74725,	"	7	11	7/77-6/79	—	—	—	Ditto
"	& 14-03-74726	"	8	12	7/79-6/81	—	—	—	"
"		"	—	etc.	—	—	—	—	"
Washington Water Power Co. (WWP)	Oct. '64 Agrm't. Amendment #4 (FPC #13.4)	8/88 & continuing.	30	0	11/74-3/75	—	—	—	
Ditto			30	0	11/75-3/76	—	—	—	
"			0	0	After 3/76	—	—	—	
Washington Water Power Co. (WWP)	Letter Agrm't. Exch. of Hanf. En. for Peak	8/75 & continuing	78.5	0	9/73-8/74	38.0	38.0	Same	
Ditto			31.0	0	9/74-8/75	15.0	15.0	Same	

EXHIBIT "B"

LIST OF MONTANA POWER CO. CONTRACTS

Sheet 2 of 3

Other Utility	Contract No. or Other Designation	Expiration Date	Firm Imports - Mw.			Firm Exports - Mw.			Remarks
			Peak	Energy	Time Period	Peak	Energy	Time Period	
Utah Power & Light (UP&L)	Serv. Sch. H-2	5/75	—	—	—	100	65	6/72-8/72	Time Exchange of Peak and Energy Availability.
Ditto	Ditto	Ditto	17	10	10/74	—	—	—	
"	"	"	27	15	11/74	—	—	—	Ditto
"	"	"	100	45	12/74	—	—	—	"
"	"	"	100	60	1/75	—	—	—	"
"	"	"	59	30	2/75	—	—	—	"
"	"	"	33	35	3/75	—	—	—	"
"	"	"	0	30	4/75	—	—	—	"
"	"	"	0	30	5/75	—	—	—	"
Puget Sound Power & Lt. (PSP&L)	MPW-1	11/76	11	0	10/74	0	80	9/72	Time Exchange of Peak and Energy Availability.
(WWP as wheeling agent)	Ditto	Ditto	80	0	11/74	0	102	10/72	
Ditto	"	"	60	0	2/75	0	81	11/72	Ditto
"	"	"	80	0	3/75	0	42	12/72	"
"	"	"	120	0	4/75	0	23	1/73	"
"	"	"	175	75	5/1-16/75	0	35	2/73	"
"	"	"	55	0	5/17-31/75	0	31	3/73	"
"	"	"	60	0	6/1-15/75	0	8	4/73	"
"	"	"	100	40	6/16-30/75	0	70	9/73	"
"	"	"	40	40	7/75	0	106	10/73	"
"	"	"	0	10	8/75	0	84	11/73	"
"	"	"	19*	0	1/76	72	60	12/73	"
"	"	"	120	0	5/76	78	42	1/74	"
"	"	"	130	40	6/1-15/76	0	55	2/74	"
"	"	"	180**	90	6/16-30/76	0	14	3/74	"
"	"	"				0	53	4/1-15/74	"
"	"	"				0	80	5/17-31/75	"
"	"	"				0	30	10/75	"
"	"	"				0	40	11/75	"
"	"	"				0	35	10/76	"
"	"	"				0	30	11/76	"

* Contingent on Colstrip #1

** May be transmission limited to 140 Mw.

EXHIBIT "B"

LIST OF MONTANA POWER CO. CONTRACTS

Sheet 3 of 3

Other Utility	Contract No. or Other Designation	Expiration Date	Firm Imports-Mw.			Firm Exports-Mw.			Remarks
			Peak	Energy	Time Period	Peak	Energy	Time Period	
Utah Power & Light (UP&L)	Serv. Sch. H-3	8/76	40	0	12/74	30	30	6/16-30/75	Time Exchange of Peak and Energy Availability. Agreement not yet reduced to contract language.
Ditto	Ditto	"	40	0	1/75	30	30	7/75	
"	"	"	60	0	12/75	30	30	8/75	
"	"	"	60	0	1/76	60	60	6/16-30/76	
"	"	"	25	0	2/76	60	60	7/76	Ditto
"	"	"				60	60	8/76	"
Puget Sound Power & Lt. (PSP&L)	MWP-2	1/77	10	0	6/1-15/75	0	48	10/76	Time Exchange of Peak and Energy Availability. Agreement not yet reduced to contract language.
Ditto	Ditto	"	0	36	7/75	0	70	11/76	
"	"	"	0	37	8/75	0	60	12/76	
"	"	"	0	57	9/75	0	50	1/77	
"	"	"	15	0	11/75				Ditto
"	"	"	47	0	12/75				"
"	"	"	29	0	1/76				"
"	"	"	14	0	2/76				"
"	"	"	16	0	3/76				"
"	"	"	0	18	7/76				"
"	"	"	0	53	8/76				"
"	"	"	37	0	12/76				"
"	"	"	38	0	1/77				"

EXHIBIT "C"

COST OF REPLACEMENT POWER FOR COLSTRIP UNITS

If the 230 kV double circuit Colstrip-Broadview transmission line is not operational by the time Colstrip Unit No. 2 comes on line, the following increased costs could result for purchase of replacement power. (It is extremely doubtful that replacement power will be available.)

Assume 12 mills/kWh for replacement energy (This is approximately our present oil cost at the Frank Bird Steam Plant.).

When a Colstrip unit is shut down, we would save 3 mills/kWh for fuel and variable O&M.

Therefore, net cost for replacement energy = 12-3 = 9 mills/kWH.

330,000 kW @ 80% capacity x $.009 = $2,376/hr

$2,376/hr x 24 hrs = $57,024/day

Of this amount, half would be Montana Power Company's cost.

Additionally, transmitting the output from one Colstrip unit over only one 230 kV transmission line creates added line losses. This amounts to extra costs as follows:

Peak Loss: 10,000 kW @ $3.75/kW-month =	$37,500/month
Energy Loss: 4,672 MWh/month @ 3 mills/kWh =	$14,000/month
Total =	$51,500/month

RCS/by/2/5

RCS
8/26/74

APPENDIX III

THE MONTANA POWER COMPANY
GENERAL OFFICES: 40 EAST BROADWAY, BUTTE, MONTANA 59701 · TELEPHONE 406 / 723-5421
SERVING YOU IS OUR BUSINESS

September 9, 1974

Mr. Albert C. Tsao, Administrator
Energy Planning Division
Montana Department of Natural Resources
and Conservation
32 South Ewing
Helena, Montana 59601

Dear Mr. Tsao:

This is to confirm in writing the answers to your three questions concerning the 230 double circuit transmission line, which we discussed by telephone last Friday. As stated on the telephone, your three questions are easily explained and answered.

Also, as previously stated, certification of this line has already been delayed, and because of the projected energy shortages and costs associated with delay, as set forth in our statement submitted July 27, 1974, it is imperative that the Department recommend and the Board act on the line at the Board's meeting this Friday, September 13, 1974. Not to act would be flirting with a disasterous energy shortage and would be adding extra costs to the general public.

Your three questions and answers thereto follow:

Q(1): How does The Montana Power Company derive its firm peak load of 868 MW for July, 1975 as set forth on page 4, on Exhibit "A" from its statement of July 27, 1974; and how is this firm peak load of 868 MW reconciled with FPC figures for 1973?

A(1): The substantial part of the increased loads on The Montana Power Company system from 1973 to July, 1975 are for the known loads under contract with the Anaconda Company, primarily for its environmentally designed arbiter plant and electric furnace. The small remainder of the projected load is for general load growth. See Exhibit "A" attached hereto for detail.

FPC form 1, form 12, and The Montana Power Company's load and resources figures submitted to the Department are reconcilable and differences are due to different reporting procedures. See Exhibit "B" attached hereto for detail.

Q(2): Has a contractor(s) been selected, and if so, how many?

A(2): A contract has not yet been awarded and one contractor will be selected. Furthermore, as pointed out, selecting more than one contractor would not necessarily expedite completion of construction because of right-of-way and other problems.

Q(3): Why does the Westinghouse Environmental Analysis state that a labor force of approximately 300 men is required to construct 110 miles of similar transmission line in six months, and is this Westinghouse statement reconcilable with the critical path submitted to the Department on July 27, 1974?

A(3): First it must be realized that the Westinghouse data referred to in this question was submitted to illustrate economic and social effects on transmission line questions and was not submitted as data regarding the construction schedule on this particular 230 double circuit transmission line. Furthermore, the Westinghouse Analysis is predicated on:

(1) 300 qualified men being available;
(2) All right-of-way being acquired; and
(3) All materials being available.

In considering the actual realistic construction schedule of the 230 double circuit line, which is what our critical path submitted to the Department on July 27, 1974 represents, it must be realized that 300 qualified men are not available. It would be lucky if one-half that many are available, even if more than one contractor were employed. A crucial factor in our critical path is right-of-way acquisition and re-engineering and resurveying in the event of any relocation from our proposed route.

Based on our right-of-way experience, it is folly to think that right-of-way can be acquired in less than 9 to 12 months.

In conclusion, the need for the Department to recommend and the Board to act at its September 13th meeting cannot be over-emphasized. There has already been delay, and it is costing the general public. The energy shortages and additional costs to the general public are set forth in our statement of July 27, 1974, and can be substantiated.

If you have any further questions, please let us know. We stand ready to provide any further information at any time. Thank you.

Very sincerely yours,

John W. Ross
Attorney

JWR:ds

Encs.

cc: Mr. Gary Wicks, Director
Montana Department of Natural
Resources and Conservation

Exhibit "A"

Rob
9/9/73

MPC° base peak forecast for July 1973 was 587 mw.

The comparable base peak forecast for July 1975 is 655 mw

This yields a 2 year growth rate of 5.6%

587mw @ 5.6% growth for 2 years = 655 mw
212 ACM
+ 1 MILW
868 FIRM PK LOAD
+ 21 INTERRUPTIBLE
889 mw TOTAL.

NOTE: Base Peak Load forecast is FIRM LOAD LESS ANACONDA Co & MILWAUKEE

NOTE: In July 1973 our Base Load forecast was only 5 mW over actual.

9/9/74

Reconciliation between Loads as Reported in FPC Forms No. 1 and No. 12 versus Montana Power Company's Load for which we have a Resource Responsibility.

July 1973 peak Load is used as an example.

FPC FORM NO. 12

756 mw - TOTAL LOAD AS Reported in FORM 12 page 25 - 1973
-31 - BPA's Coop Load
-16 - USBR's " "
+11 - USIIS LOAD - MPC° Responsibility
+3 - Hydro STATION USE.
723 mw - MPC° RESOURCE RESPONSIBILITY

FPC FORM NO. 1.

707 mw - TOTAL LOAD AS Reported in Form 1. page 431 - 1973
+14 - BPA COOP Adjustment
-1 - USBR COOP Adjustment.
+3 - HYDRO STATION USE
723 mw - MPC° Resource Responsibility

NOTE: Because of our arrangements with USBR and BPA, the amounts of power sent into our system do not necessarily represent the actual Coop loads for USBR and BPA for any one hour. On a daily, monthly, or annual basis however the amounts of power sent to us must equal the amount of power we send to their coops. On an hour to hour basis, some of our own generation is used to supply part of their Coop loads and during other hours, some of their power sent to us is used to cover our Load. It is this reason that Form No. 1 Reports a different Load.

In the above, BPA sent an additional 14mw during the peak hour in July 1973 over what their Coop Load required, hence the additional 14mw was absorbed by our system to cover our Load. The one (1) mw USBR adjustment was a USBR Load for which they did not send generation to cover that hour. We supplied it but it is not our Responsibility. Provided that the power delivered equals the power sent in a time period, we are satisfied.

APPENDIX IV

SERVING YOU IS OUR BUSINESS

GENERAL OFFICES 40 EAST BROADWAY, BUTTE, MONTANA 59701 · TELEPHONE 406/723-5421

September 20, 1974

[illegible]
SEP 2[illegible]
[illegible]
RESOURCES & CONSERVATION

Mr. Albert Tsao
Administrator
Energy Planning Division
Department of Natural Resources
and Conservation
32 S. Ewing
Helena, MT 59601

Dear Albert:

Transmitted herewith is a Petition in Support of our position that the Department recommend and the Board waive the requirement of filing an application two years in advance regarding the Colstrip-Broadview 230 kV double circuit line.

Thank you.

Sincerely,

John W. Ross
Attorney

JWR:mco

Enclosure

MEMORANDUM IN SUPPORT OF PETITION TO WAIVE PROVISIONS OF SECTION 70-806(1)

I. STATUTES

70-806(1)[1] in pertinent part provides:

> "At least two years prior to anticipated commencement of construction of an utility facility as defined in...an applicant for a certificate shall file with the department an application, in such form as the department may prescribe, containing...."

70-806(7)[2] in pertinent part provides:

> "The Board may waive compliance with the time limits of this section if an applicant makes a clear and convincing showing that an immediate need for a facility exists and that the applicant did not have knowledge that the need existed sufficiently in advance of the need to file an application within the time provided in subsection (1) of this section."

70-811(3)[3] in pertinent part provides:

> "The time requirement of section 70-806 and any provisions described in sections 70-807 to 70-811 of the act may be waived by the Board, for good cause shown with respect to applications filed before January 1, 1975. Applications for certificates under this subsection (3) must be filed promptly. A certificate is not required under this act for facitities under construction or in operation on January 1, 1973. However, a certificate must be obtained for associated facilities upon which construction has not commenced before January 1, 1973, subject to the waiver provisions of this section."

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[1] Montana Utility Siting Act of 1973, 70-801 et seq. RCM, 1947.

[2] Ibid.

[3] Ibid.

II. HISTORY

The Montana Utility Siting Act of 1973 (70-801 et seq, RCM 1947) (Siting Act) became effective March 16, 1973. Colstrip generating Units 1 & 2 were exempt from the Siting Act under 70-811(3). Although the associated facilities of Units 1 & 2, such as the 230 kV double circuit transmission line here involved, are covered by the act, it was the intent of the Legislature to permit the effective and reliable operation of Units 1 & 2, and to confine the review of the associated facilities primarily to the routing thereof.

As shortly as possible after the Siting Act became effective and before there were any regulations under the Siting Act, the applicants proceeded to gather data and prepare an application for the associated facilities of Units 1 & 2, which application was filed June 29, 1973. Contemporaneously with that filing, the applicants filed a petition for waiver of the time requirements of section 70-806, and to the extent necessary, of the provisions of sections 70-806 through 70-811 thereof, which petition specified that in order to accommodate the operation of Colstrip Units 1 & 2 construction of the 230 kV double circuit line must be completed by July 1, 1975, and to meet this completion deadline, construction must commence on or before April 1, 1974.[4]

By agreement dated November 1, 1973, the applicants and the department entered into an agreement which provided in part that the application regarding the associated facilities of Units 1 & 2 would be amended so as to provide for two applications; one for the 230 kV double circuit electric transmission line here involved, and a separate application for the water supply system. The agreement also provided that the department will endeavor to process the application for the 230 kV double circuit electric transmission line as expeditiously as possible and will attempt to have its recommendations ready for the Board before the Board's June, 1974, meeting, so that consideration may be given to the granting, denial or modificiation of a certificate of environmental compatibility and public need for said 230 kV double circuit transmission line before June 30, 1974.[5]

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[4] "Application for a Certificate and Public Need", and "Petition or Waiver of the Time Requirements of Section 70-806, and to the extent necessary, of the Provisions of Sections 70-806 through 70-811 thereof." Associated Facilities for Colstrip Units 1 & 2.

[5] Agreement, The Montana Power Company and Puget Sound Power and Light Company and the Department of Natural Resources and Conservation, dated November 1, 1973.

III. REASONS WHY REQUIREMENT OF FILING TWO YEARS IN ADVANCE OF ANTICIPATED CONSTRUCTION SHOULD BE WAIVED.

A. Based on Interpretation of the Act and Legislative Intent.

As set forth in part II, supra, the applicants originally petitioned the Board to waive any and all of the time requirements and proceedings of sections 70-806 through 70-811 in order that construction of the 230 kV double circuit transmission line here involved could commence on or before April 1, 1974. However, the department and the Board have or are in the process of complying with or implementing all of the time requirements and proceedings of sections 70-806 through 70-811 except for the requirement that the applicants, at least two years prior to anticipated commencement of construction of a utility facility, file an application with the department. Therefore, the only thing for the Board to waive now is this requirement that the applicants file an application two years in advance of anticipated construction.

In order for the applicants to meet this requirement of filing two years in advance of anticipated construction, the applicants would have had to file an application for this 230 kV double circuit transmission line in April of 1972 in that construction thereof was anticipated to commence in April of 1974. Filing in April of 1972 simply would have been impossible because the Siting Act did not become effective until March 16, 1973. The law never requires impossibilities.[6]

However, it is submitted that the legislature contemplated this impossibility and therefore provided in section 70-811(3) that although a certificate is required on associated facilities upon which construction had not commenced before January 1, 1973, such as the 230 kV double circuit transmission line here involved, the time requirements of sections 70-806 through 70-811 may be waived by the Board for good cause shown.[7]

This waiver provision in section 70-811(3) should govern in this case exclusive from the waiver provision in section 70-806(7), because section 70-811(3) is designed to provide a temporary transitional period to accommodate existing energy planning, including construction of associated facilities such as the 230 kV double circuit transmission line here involved, which were planned and designed before the Siting Act. This is why section 70-811(3) provides that the Board may waive the time requirements of section 70-806 and any of the provisions of sections 70-806 through 70-811, with respect to applications filed before January 1, 1975.

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[6] Section 49-123, RCM, 1947.

[7] Op cit, Section 70-811(3), RCM, 1947.

Whereas, the waiver provision in section 70-806(7) is a permanent continuing provision designed to accommodate the situations where an immediate need for a facility develops unpredictably, whereby the applicant does not have knowledge that the need existed sufficiently in advance. For example, at any time in the future natural gas may be abruptly curtailed and an electric transmission line may be needed quickly to provide a substitute heating source for homes and businesses and, therefore, the time requirements of section 70-806 would have to be waived.

Furthermore, the Legislature exempted Colstrip Units 1 & 2 from the Siting Act and it is submitted that by exempting Units 1 & 2, it was the intent of Legislature to effectuate the reliable and full operation of Units 1 & 2 as scheduled by the applicants. In order to effectuate the reliable and full operation of Colstrip Units 1 & 2, it is necessary that the 230 kV double circuit line here involved be constructed as required by the applicants. Colstrip Unit 1 will be operational in April of 1975, and will be in commercial operation in July of 1975 and, therefore, the 230 double circuit transmission line here involved is needed by July of 1975 to reliably transmit the electricity from Unit 1. Colstrip Unit 2 will be operational in April of 1976 and will be in commercial operation in July of 1976 and, therefore, the 230 kV double circuit transmission line here involved is also needed in July of 1976 to transmit the power from Unit 2.

To summarize this first argument based on interpretation of the Siting Act and Legislative intent, it is submitted that the requirement to file two years in advance of anticipated construction must be waived because it is impossible for the applicants to have filed two years in advance of anticipated construction of the 230 kV double circuit transmission line here involved because the Siting Act was not in existence in April of 1972, but rather became effective March 16, 1973. Certainly this impossibility of filing constitutes good cause for waiving section 70-806(1) because the law does not require the impossible.

Furthermore, by exempting Colstrip Units 1 & 2 from the Siting Act, it was the intent of the Legislature to effectuate the reliable and full operation of Units 1 & 2 and in order to so effectuate this requirement to file two years in advance must be waived so that construction of the 230 kV double circuit transmission line here involved can commence immediately. Certainly the reliable operation of Units 1 & 2 constitutes good cause for waiving section 70-806(1).

B. Based on the Need for the Facility.

There is a need for the facility here involved as stated in the draft EIS, "since Units 1 and 2 have previously been approved by the State, the proposed transmission line is needed to transmit the electricity generated from the Units."[8] Unit 1 at Colstrip is scheduled to be in commercial operation in July, 1975, at which time the transmission here involved will be needed for reliability. Unit 2 is scheduled to be in commercial operation in July, 1976, at which time the transmission line here involved will be needed to transmit power.

To further amplify this need, and to demonstrate the critical effects if this need is not met, it is helpful to review the projected loads and resources for 1975-76 of The Montana Power Company. These loads and resources are set forth in detail in the attached Exhibit "A".

To illustrate, note, for example, on sheet 2, line 3 of Exhibit "A", there will be a peak deficiency of 204 MW in July, 1975, on The Montana Power Company system in the event that there is an outage on existing transmission and the 230 kV double circuit transmission line here involved is not completed at that time. Also, note on sheet 2, line 5 of Exhibit "A", that in July, 1976, there will be a peak deficiency of 172 MW on The Montana Power Company system in the event the 230 kV double circuit line here involved is not completed at that time. And, as shown on line 6, sheet 2 of Exhibit "A", there will be a peak deficiency of 337 MW on The Montana Power Company system in July, 1976, in the event there is an outage on existing transmission and the 230 kV double circuit transmission line here involved is not completed. To appreciate the magnitude of these 204 MW, 172 MW and 337 MW deficiencies, note, for example, that the entire Billings area, exclusive of refineries, presently uses only 93 MW. These shortages, which are based on well substantiated projections, are of such magnitude that contingency plans, other than immediate construction of the 230 kV double cirucit transmission line here involved, are not viable.

The projected load increases consist in large part of known loads, under contract, with The Anaconda Company, primarily for their new environmentally designed refining equipment.[9] Incidently, it is interesting to note that during the last three months, the actual base load on The Montana Power Company system has exceeded the actual base load estimates for those months.[10]

Purchase and shipment of power from outside Montana, to solve deficiencies of the magnitude here involved, are not viable contingencies. First, no source of replacement power is known and if it were available, it would cost an additional $57,024 per day,[11] which costs, like so many other cost in this period of inflation, are ultimately borne by the public. Certainly power is not available, whether from our own resources or elsewhere, in such great quantities to solve these peak deficiencies of 204 MW, 172 MW or 337 MW.

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[8] Colstrip to Broadview 230 kV transmission line, Draft EIS, page 6.

[9] Letter of September 9, 1974 to Mr. Albert C. Tsao, page 1 and Exhibit "A" attached to letter.

[10] The base loads, normalized for weather, exceeded the estimated base loads by 9.8 MW in May, 1974, by 10.5 MW in June, 1974, and 24.7 MW in July, 1974. The estimated loads had not been lower to project conservation, and these same loads form the basis for our present projections.

Montana Power Company's own reserves are generally used to carry Montana Power Company's interruptible customers. If Montana Power Company cuts off its interruptible load this would save only approximately 20 MW. Montana Power Company cannot legally use the reserves of other companies in the event of deficiencies caused by inadequate transmission. Not only is power in these great quantities not available, but if it were available, it may be impossible to transmit it into The Montana Power Company system because the transmission lines connecting The Montana Power Company system to other systems may be at their full capacity at this time. If peak deficiencies of 204 MW, 172 MW or 337 MW occur, it may cause the entire Western United States' system to sag, tripping other lines out of service, causing a general blackout. If peak deficiencies of 204 MW, 172 MW or 337 MW occur, Montana Power Company would probably have to attempt a drastic curtailment of service on its own system, and there is not mandatory plan or provision for such curtailment.

In short, these deficiencies, or risk thereof, such as 204 MW, 172 MW or 337 MW, are of such serious magnitude that they must be avoided. The only feasible way to avoid these deficencies is to issue a certificate to allow construction and completion of the 230 kV double circuit transmission line here involved which was part of The Montana Power Company energy planning long before the existence of the Siting Act.

C. Based on the Immediate Need for the Facility.

The 230 kV double circuit line here involved is needed to effectuate the full and reliable operation of Colstrip Units 1 & 2 as intended by the Legislature and the Siting Act as discussed in subpart "A", supra, and is needed to avoid serious sizable power deficiencies and effects therefrom as discussed in subpart "B", supra. This need for the 230 kV double circuit line here involved and a certificate authorizing its construction is immediate, considering the commercial operation schedule of Colstrip Units 1 & 2 and the construction schedule of said transmission line.

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11. Comments, EIS, Colstrip to Broadview 230 kV double circuit transmission line, July 27, 1974, page 3.

Colstrip Unit 1 is scheduled for operation in April of 1975 and full commercial operation in July, 1975. The 230 kV double circuit line here involved is needed to reliably transmit the power from Unit 1 when it comes into commercial operation and therefore said line should be completed by July of 1975. Based upon Montana Power Company's extensive system engineering and based upon advice of other outside utility experts and utility system engineers, the applicants first wish to re-emphasize the need for having said line completed when Unit 1 is in commercial operation. As discussed in subpart "B", supra, if there are problems on the existing transmission after Unit 1 is in commercial operation and the 230 kV double circuit line here involved is not completed, there are sizable, serious problems. C. T. Main, our outside engineering consultant, again recently emphasized that prudent utility system design dictates that the said 230 kV double circuit line be completed when Unit 1 is in commercial operation.[12] If said 230 double circuit line is not completed when Unit 1 is on line, in addition to having an inadequate transmission system and risking sizable power shortages, there are additional costs because of power losses due to excessive loading of existing transmission. Again, these are passed on to the public as part of this period of inflation.

Secondly, Unit 2 is scheduled for operation in April of 1976 and full commercial operation in July, 1976. The 230 kV double circuit line here involved is needed to transmit the power from Unit 2. Therefore, said line should be completed by April, 1976, to accommodate testing and break-in of Unit 2 and must be completed in order to transmit power to load demands after July, 1976. When Unit 2 is tested and being broken in, it will produce electricity which must be transmitted and although it could probably be done by cutting back Unit 1 and replacing power on existing transmission with power from Unit 2, it could present difficulties. But more importantly, we cannot over emphasize the need to have this line completed and in full operation in July, 1976, when Unit 2 will be in full commercial operation. As discussed in subpart "B", supra, if said line is not in operation by July, 1976, there will be sizable, critical power deficiencies.

In considering these schedules of Colstrip Units 1 & 2, the construction schedule of the 230 kV double circuit line here involved should be reviewed.

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[12] C. T. Main, is a nationally recognized engineering consulting firm which is familiar with many utility systems and generally concludes The Montana Power Company transmission system is comparatively thin. C. T. Main emphasizes the need to complete said 230 kV double circuit line when Unit 1 is in operation and will confirm this by letter.

Originally, before the effective date of the Siting Act, the applicants had scheduled construction of said line to commence on April 1, 1974, in order that said line would be completed when Unit 1 came into commercial generation. Therefore, in the application and petition for waiver regarding said transmission line, the applicants asked that construction of said line commence on or before April 1, 1974.

When it became apparent to the applicants that commencement of construction of said line may be delayed beyond April of 1974, the applicants met with the department, and the department agreed to endeavor to have its recommendations ready for the Board's June, 1974, meeting so that the Board could make a decision regarding said line before June 30, 1974.[13] Whereupon, the applicants revised their April 1, 1974, start of construction date and submitted to the department a critical construction schedule path showing construction of said line starting July 1, 1974, and being completed in February, 1976. Unfortunately, with this first delay moving the start of construction to July 1, 1974, said transmission would not be completed when Unit 1 came into commercial operation, which itself, as pointed out in this subpart "C", above, is unacceptable.

Moreover, obviously there is further delay beyond the July 1, 1974, start of construction which, of course, further aggravates the problems discussed in subpart "B", above.

After the draft EIS was issued on said transmission line, the applicants again revised the construction schedule of said line which schedule indicates that if construction of said line were to commence in September of 1974, it would be completed in May of 1976. This, of course, means said line will be unavailable when Unit 1 comes into commercial operation which is contrary to the intent of the Legislature and the Siting Act as discussed in subpart "A", above, and there are the energy shortage problems as discussed in subpart "B", above. Moreover, it appears that construction of said line may not commence until the end of October which means said line would not be completed until about July, 1976, when Unit 2 will be in commercial operation. Based on a construction schedule starting at the end of October, 1974, even if any further minor problems or delays occurred, said transmission line will not be available when Unit 2 will be in operation. This would simply mean a drastic energy shortage as discussed in subpart "B", above.

The construction schedule for said transmission line as illustrated by the critical path diagrams previously submitted is realistic.

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[13] Agreement, op cit, November 1, 1973.

Based on these critical path diagrams, the overall time necessary to complete said transmission would be almost 20 months after obtaining a certificate to construct. However, this time schedule could actually range from 18-24 months. If all rights of way were obtained and everything else was favorable, actual construction could probably be completed in 15 months. These critical path schedules are further substantiated by other utilities' and our own experience with constructing other transmission lines, and by experienced transmission line contractors and consultants.

Tom Wagenhoffer, manager of construction for BPA, reviewed these construction schedules this week and concurred that based on BPA's experience, 15 months for actual construction was realistic. Don Davidson, manager of transmission engineering for Portland General Electric, also said this week that based on Portland General Electric's experience with constructing similiar steel-towered transmission lines that 15 months for actual construction is reasonable. Mr. Davidson said Portland General Electric recently constructed 157 miles of line somewhat similar to the line here involved in 20 months with a work force of 80 to 100 men.

The Montana Power Company's own experience with wood-pole lines also supports this 15 month actual construction schedule.

There are several reasons why it takes time to build a transmission line such as the one here involved. One of the big problems is acquisition of right of way. For example, right of way acquisition commenced on the Missoula-Hamilton wood-pole 161 kV line in February, 1972, and not until 17-1/2 months later was possession of right of way obtained, and almost 3 years after right of way acquisition started this Missoula-Hamilton 161 kV line is still not quite complete. On the Billings-Great Falls 230 kV line right of way acquisition began about 2 years ago and there are still 19 landowners who have not granted right of way.

On the applicants preferred route on the 230 kV double circuit line here involved, right of way acquisition commenced August 25, 1973, and intensively continued for about 7 months. Rights of way were acquired from 22 of the 55 landowners. There are 189 landowners on the corridor proposed by the department. It is estimated that it would take approximately 11.6 months to attempt to acquire right of way on the department's route. This is based upon:

190 hours title search and verification
567 hours personal contact (3 calls per landowner)
900 hours travel time
400 hours paper work
2057 hours = 257 days = 11.6 months

Condemnation which probably would require three months at a minimum may also be necessary. Having a state certificate of need may help but condemnations will still take time. it should be noted that this right of way experience on the 230 kV double circuit line here involved is based on comparatively fair and generous offers. For example, full market value of all the land in the right of way, plus $100 per tower in grazing land, and $300 per tower in farming land, plus damages during construction are offered, which compares to 60-80% of market value of land in the right of way as offered by Wisconsin Electric Power for their transmission lines.

A lot of time and activity is required even before right of way activity can commence, such as:

1. Permission to survey and gaining access.
2. Aerial survey work which must be done before snowfall.
3. Soil testing.
4. Core drilling.
5. Foundation testing.
6. Ground inspections.
7. Transmitting survey information to design contractor.
8. Preparation of maps..
9. Development of centerline.
10. Approach landowners.

There are several other reasons why it takes time to construct a transmission line. For example, there is a lot of preconstruction activity such as clearing, road work, gate construction, foundation pouring, etc. Steel towers require more work than wood-pole structures in that they require excavation, pouring concrete, assembling and erecting.

Proper receiving and distribution of materials are also important. Some of the materials will be delivered this Fall and they should be distributed to the construction site preferably this Winter when the ground is frozen to avoid damage to the environment.

One of the critical items is stringing of conductors, which itself requires a minimum of 180 days. The four-bundle conductors designed to reduce environmental impact which will be used on this line may also require more time to install. Stringing of conductor requires special equipment which equipment is very expensive and of limited availability.

There are also several problems with trying to expedite the construction schedules as set forth in the critical path charts. There is likely to be greater environmental impact because of rushing the job such as tearing up the ground when trying to work during rainy weather. Also, stringing of the conductors is difficult to expedite. With one operation it is difficult to string more than three miles per week and is more difficult or impossible in extreme weather. This would mean 9 months are necessary for stringing conductors alone. Two or more wire stringing operations are not feasible because of limited availability and cost of equipment. According to Merle Harkness, transmission engineer for C. T. Main, the availability in 1975 of two tensions to string four conductor bundles is questionable. Two operations would require upwards of 250 men and attracting this many qualified workmen to this job in Montana is unlikely. Furthermore, qualified contractors are not apt to commit their equipment and supervisors to about 55 miles of steel towered line when there are other lines to construct, and one contractor would not have the resources or supervisors for two concurrent operations.

An accelerated schedule based on a 60 hour or more week increase labor costs substantially and records indicate excessive overtime produces diminishing productivity. It is estimated that increased labor costs on an accelerated schedule would be approximately 2.5 million dollars which costs are passed on to the public.

In summary there are several reasons why it takes time to construct a transmission line like the one here involved, and further, there are several problems and impossiblities with trying to expedite the construction schedules as shown on our critical path diagrams, and, finally, there are also factors which may lengthen the construction schedules as shown on our critical path diagrams. For example, excessive bad weather, delay in material deliveries, labor problems and further litigation. Any changes in location or design as proposed by the applicants or restrictive conditions in the certificate, would, of course, add substantial further delay. Time is running out and the harm and risks are grreat.

Respectfully submitted,

THE MONTANA POWER COMPANY

PUGET SOUND POWER AND LIGNT COMPANY

Dated this 20th day of September, 1974.

BEFORE THE BOARD OF
NATURAL RESOURCES AND CONSERVATION
STATE OF MONTANA

IN THE MATTER OF THE HEARING)
ON WAIVERS AND HEARING ON)
THE APPLICATION FOR CERTIFICATE)
OF ENVIRONMENTAL COMPATIBILITY)
AND PUBLIC NEED FOR THE COLSTRIP)
TO BROADVIEW 230 KV DOUBLE CIRCUIT)
TRANSMISSION LINE)

NOTICE OF HEARING

TO: ALL PARTIES TO CERTIFICATION PROCEEDING

1. On November 7, 1974, at 9:00 a.m. the Board of Natural Resources and Conservation shall hold a hearing in the Library Auditorium, Eastern Montana College, Billings, Montana, to consider the applications for waiver of the time requirements of section 6 and, to the extent necessary, of the provisions of sections 7 through 11 of the Montana Utility Siting Act, and to consider the application for Certificate of Environmental Compatibility and Public Need for the Colstrip to Broadview 230 KV double circuit transmission line.

2. The hearing will be presided over and conducted by Joseph W. Sabol, Chairman of the Board of Natural Resources and Conservation.

3. The contested case procedures of the Montana Administrative Procedure Act [82-4201 to 82-4225, R.C.M. 1947] shall apply to the hearing, except that neither common law nor statutory rules of evidence shall apply. All repetitive, redundant or irrelevant testimony shall be excluded.

4. All parties to the certification proceeding have the right to be represented by legal counsel.

5. All parties to the certification proceeding are requested to file a notice of intention to participate at the hearing by filing their name and affiliation with the Hearings Coordinator, Department of Natural Resources and Conservation, 32 South Ewing, Helena, Montana. The notice should be received by the Department prior to Monday, November 4, 1974.

Oct. 21, 1974
Date

JOSEPH W. SABOL, CHAIRMAN